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MINED LAND RECLAMATION

ANNUAL REPORT

October 1, 1977 to October 1, 1978

KENNECOTT COPPER CORPORATION  
UTAH COPPER DIVISION

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In M/ 035 002, 1978, Income

For additional information

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# **Kennecott Copper Corporation**

## **Utah Copper Division**



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SALT LAKE CITY, UTAH 84147

December 29, 1978

State of Utah  
Department of Natural Resources  
Division of Oil, Gas, and Mining  
1588 West North Temple  
Salt Lake City, Utah 84116

Attention: Mr. Cleon B. Feight, Director

Gentlemen:

Enclosed is the annual mined land reclamation report for Kennecott Copper Corporation's Utah Copper Division. This report summarizes work performed during the period October 1, 1977 to October 1, 1978 as approved on the Notice of Intention to Commence Mining Operations #Act-035-002, August 9, 1976, and subsequent surety agreement.

If you have any questions or comments about this report, please contact me.

Yours very truly,

W. D. Southard  
Engineering Services Manager

WDS/ac  
Enclosure

cc: Mr. R. N. Pratt, w/enc.

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MINED LAND RECLAMATION ANNUAL REPORT  
OCTOBER 1, 1977 TO OCTOBER 1, 1978

KENNECOTT COPPER CORPORATION  
UTAH COPPER DIVISION

INTRODUCTION

The following report is submitted to the Utah State Division of Oil, Gas and Mining as prescribed under paragraph (b), Rule M-8, Utah State Mined Land Reclamation Act of 1975. The report summarizes work performed during the period October 1, 1977 to October 1, 1978 as approved on the Notice of Intention to Commence Mining Operations #Act-035-002, August 9, 1976 and subsequent surety agreement.

LOCATION OF OPERATIONS

Under the original notice the operations of the Bingham mine and concentrator were conducted in the following sections of Salt Lake and Tooele Counties:

Sec 7, 8, 9, 10, 11, 17, 18, 19, 20, 21, 30, 31 & 32, T1S, R2W, SLB&M;  
Sec 9, 10, 11, 12, 13, 14, 15, 16, 22, 23, 24, 25, 26 & 36, T1S, R3W, SLB&M;  
Sec 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 22, 23, 27, 28 & 33, T2S, R2W, SLB&M;  
Sec 7, 8, 17, 18 & 19, T3S, R1W, SLB&M;  
Sec 8, 13, 14, 15, 16, 17, 18, 19, 20, 21, 24, 25, 28, 29, 30, 31 & 32, T3S, R2W, SLB&M;  
Sec 11, 12, 13, 14, 15, 21, 22, 23, 24, 25, 26, 27, 33, 34, 35 & 36, T3S, R3W, SLB&M;  
Sec 6 & 7, T4S, R2W, SLB&M;  
Sec 1, 2, 3, 11 & 12 T4S, R3W, SLB&M.

Disturbance of the natural terrain during the period was confined to the following sections in Salt Lake County:

Sec 18, 19, 29, 30 & 31, T3S, R2W, SLB&M;  
Sec 13, 36, T3S, R3W, SLB&M;  
Sec 1, T4S, R3W, SLB&M;  
Sec 6, T4S, R2W, SLB&M.

SUMMARY OF MINING AND CONCENTRATOR OPERATIONS

During the reporting period, an estimated 158,687,000 short tons of material were moved at the mine. Waste material from the concentrator operations was deposited on the division's existing tailing pond. This resulted in a rise in elevation of the tailing pond of approximately four (4) feet. There was no increase in tailing areas (disturbed acreage) as a result of the concentrator operations.

Although no new acreage was disturbed in the mine area, waste disposal operations and construction disturbed an estimated 98.1 acres of previous undisturbed ground.

These areas are summarized as follows:

1.	Area disturbed by rail waste operations	18.0	acres
2.	Area disturbed by truck waste operations	52.0	"
3.	Area disturbed for shop expansion	9.2	"
4.	Area disturbed for rail yard expansion	10.1	"
Total		89.3	"

In addition, construction at the mine disturbed the following acreage:

5.	Office building construction	2.4	acres
6.	Improved rail dump access road	6.4	"
Total		8.8	"

The only other major disturbance in the area involved the demolition of barrack-type housing in Lark. This work was accomplished in an environmentally sound manner including regrading to approximate contours of the surrounding area and preservation of existing vegetation, where possible.

#### MONTHLY STATUS OF RECLAMATION WORK

##### TAILING POND BERM AND DIKES

Oct 1977	Seeded and fertilized berms on 100 acres of the tailing pond. Five tons of fertilizer was used with one ton of grass seed. Fifty trees were pruned around the dike. There were 3,000 grass and shrub plugs planted that had been grown in the greenhouse.
Nov 1977	Planted 5,000 shrub and grass plugs in the dike area. Pruned and fertilized trees around the dike.
Dec 1977	Planted 200 wheat grass plugs on the tailing berm.
May 1978	Planted 50 pounds of wheat grass on dike berm and 300 alfalfa plugs.
Jul 1978	Involved in plant and shrub maintenance on the tailing dike.
Aug 1978	Plant and shrub maintenance imperative because of the drought conditions.
Sep 1978	Plant and shrub maintenance.

##### CONCENTRATOR

Oct 1977-Oct 1978

Nov 1977	Continued landscape beautification in concentrator area. Planted 500 flowering bulbs, hauled in topsoil and gravel. Planted 10 specimen-type trees and pruned and fertilized existing trees.
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Dec 1977 Planted 200 Kochia plants, pruned trees and fertilized plants and shrubs in test area on railroad fill south of Bonneville car dumper. Also, fertilized trees at Bonneville. Planted 50 pounds of wheat grass on Magna mill landfill dump.

Jun 1978 Improved disturbed areas around Toronto cave, hand spread 20 yards of topsoil, constructed an erosion control wall and planted 50 native shrubs. Did shrub maintenance at concentrator.

Jul 1978 Maintenance work on shrubs and plants at the concentrator.

Aug 1978 Shrub, plant and tree maintenance at the concentrators.

Sep 1978 Shrub, plant and tree maintenance at the concentrators.

#### MINE

Oct 1977 Trees watered and fertilized at the evaporation ponds.

Nov 1977

1. Fertilized the Castro disturbed area. Seeded 50 pounds of grass seed there and planted 200 rubber rabbit brush plugs from the KCC greenhouse.
2. Fertilized and spread lime around the trees at the evaporation pond.
3. At the West Mountain area, planted 300 grass plugs from KCC greenhouse for a grass trial area on mine waste railroad fill.
4. On Copper Notch, planted 500 grass plugs (from KCC greenhouse) on 1/4 acre. Also broadcast grass seed in another 1/4 acre adjacent to grass plugs.

Dec 1977 Fertilized grass plugs at West Mountain and Copper Notch.

Feb 1978 Started demolition of old barracks in Lark.

Apr 1978

1. Planted 50 rose bushes and fertilized them and other shrubs on Castro disturbed area. (Planted roses because goats, cows and sheep had grazed other shrubs previous year.)
2. Made catch basins around trees at evaporation ponds and replaced nine destroyed trees.
3. Planted 2,400 shrubs donated by the U. S. Forest Service on Copper Notch. A one-acre site had been prepared by ripping the area with a grader. The shrubs were either containerized or bare root stock and were fertilized by a pellet placed in each hole dug for the plant. The area was mapped also.

- May 1978 Tree maintenance at the evaporation pond.
- Jun 1978
1. Tree maintenance at evaporation pond.
  2. Maintained shrubs and some landscape improvement at West Mountain.
  3. Did landscape maintenance and improvement at Yosemite truck operations office.
- Jul 1978
1. Planted 1,500 fourwing salt bush along evaporation pond dikes and planted 500 more grass plugs there. Maintained trees.
  2. Took a plant inventory on Midas dump and Copper Notch test planting areas.
- Aug 1978
1. Planted 1,000 more fourwing salt bush during August at the evaporation ponds. The lack of rain necessitated a lot of tree maintenance.
  2. Hauled lime for railroad fill plot study at West Mountain.
- Sep 1978
1. Maintained trees at the evaporation ponds. Lime was hauled to three more ponds.
  2. Broadcast seeded 50 pounds of pubescent wheat at the Castro disturbed area.

#### GREENHOUSE

- Oct 1977 Plant material and equipment maintenance and repair for tailing pond seeding at greenhouse.
- Nov 1977 Shrub and tree maintenance in greenhouse.
- Dec 1977 Equipment repair and maintenance at greenhouse as well as greenhouse cleanup and preparation for planting inside the greenhouse.
- Jan-Mar 1978 All work was primarily inside the greenhouse due to weather conditions. During that time, the production was 13,600 plants.
- Also during that period, species testing with seed samples from the Soil Conservation service was done. Seed germination studies were conducted in hostile soils taken from the smelter canyon. Research literature review was made to update revegetation techniques and improve reclamation work.
- Apr 1978 Maintained the shrub production inside the greenhouse and prepared planting equipment as well as moving some plants to the cold frame.



May 1978	Maintained shrubs inside greenhouse.
Jun 1978	Maintained shrubs inside greenhouse.
Jul 1978	Maintained shrubs inside greenhouse.
Aug 1978	Maintained shrubs inside greenhouse.
Sep 1978	Maintained shrubs inside greenhouse. Set up new storage sheds for seed and fertilizer.

Presently, the greenhouse is capable of producing a large number of plants and the type needed to rehabilitate Utah Copper Division properties. The plants are consistently high quality and available for use at the best planting time.

RECLAMATION WORK COST SUMMARY FROM OCTOBER 1, 1977 TO OCTOBER 1, 1978

Material Cost	\$22,885.72
Labor Cost	49,608.00
Rental and Equipment Use Cost	14,941.00
Total	<u>\$87,434.72</u>